



**Read and keep this book
for future reference. This book contains
important information on **SAFETY, PREPARATION,
OPERATION, AND MAINTENANCE.****

MODEL
461000x8A

PRODUCT INFORMATION

**The owner must be certain that all
the product information is included with the unit.**

**This information includes
the INSTRUCTION BOOKS,
the REPLACEMENT PARTS and the WARRANTIES.**

**This information must be included to make sure state laws and other laws
are followed.**



**RECORD THE FOLLOWING INFORMATION ABOUT YOUR UNIT. THIS
INFORMATION IS NECESSARY WHEN ORDERING PARTS OR IN CASE
OF LOSS OR THEFT.**

WHERE PURCHASED: _____.

DATE PURCHASED: Month _____ Day _____ Year _____.

MODEL NO.: _____ **DATE OF MANUFACTURE:** _____.



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MURRAY, INC. Two Year Limited Warranty

Murray, Inc. warrants to the original purchaser that this unit shall be free from defects in material and workmanship under normal use and service for a period of **Two (2) Years** from the date of purchase; however, this warranty does not cover engines, accessories (such as snow blowers, snow blades, grass baggers and plows), transmissions, batteries and Normal Wear Parts (except as noted below) or transaxles as the companies that manufacture these items furnish their own warranties and provide service through their authorized field service facilities. For additional information, see the warranties covering these particular parts. If you are uncertain whether your unit contains or is equipped with one or more of these parts, consult your dealer prior to purchase. Subject to the terms and conditions noted in this Limited Warranty, we shall, at our option, repair or replace at no cost to the original purchaser any part covered by this Limited Warranty during the applicable warranty period.

In the event the battery proves defective within ninety (90) days from the date of purchase, we will replace it without charge. If the battery proves defective after (90) days but within one hundred twenty (120) days from the date of purchase, we will replace it for a charge of one half (1/2) of the retail price of the battery in effect at the time of return.

Normal Wear Parts are defined as belts, blades, blade adapters, pneumatic tires, headlights and seat covers. These parts are warranted to be free from defects in material and workmanship as delivered with the product. Any claim for repair or replacement of Normal Wear Parts must be made within thirty (30) days of the date of purchase. No claims involving damage caused from material use, abuse or misuse will be honored.

This **Murray, Inc. Two (2) Year Limited Warranty** is your exclusive remedy; however, this warranty is void or does not apply to any unit that has been tampered with, altered, misused, abused or used for rental or other commercial and/or professional (non-homeowner) uses. Your warranty does not cover minor mechanical adjustments which are not due to any defect in material or workmanship. For assistance in making such adjustments, consult your Instruction Book.

To make a claim under this **Murray, Inc. Two (2) Year Limited Warranty**, return the unit (or if authorized in advance, the defective part) along with your proof of purchase to an Authorized Service Center near you. To locate the nearest Authorized Service Center, call the Central Parts Distributor for your area shown in the list provided with your unit or check the Yellow Page listings in your local telephone directory. If you return the entire unit, we will repair the unit. If we authorize the return of the defective part only, we will either replace or repair the part. In the case of a defect in a transmission or differential (as distinguished from a transaxle), the entire transmission or differential must be returned since they do not include user serviceable parts.

This **Murray, Inc. Two (2) Year Limited Warranty** gives you specific legal rights, and you may also have other rights which vary from state to state. **This Limited Warranty is given in lieu of all other expressed and implied warranties including the implied warranty of merchantability and warranty of fitness for a particular purpose.** If you need additional information on this written warranty or assistance in obtaining service, write or call: **MURRAY, INC.**, Outdoor Power Equipment, Customer Service Department, P.O. Box 268, Brentwood, Tennessee 37027. (1-800-251-8007)

OWNER'S INFORMATION

This instruction book is for several different models. The instructions are written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

Know your product: If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

IMPORTANT: Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly assembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.



WARNING:



Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.

RESPONSIBILITY OF THE OWNER

The responsibility of the owner is to follow the instructions below.

1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.
5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.

Environmental Awareness

- Do not fill the engine's fuel tank completely full.
- Drain fuel for off-season storage.
- Use only unleaded gasoline.
- Service the air cleaner regularly.
- Change oil regularly. Use 10W-30 oil in summer.
- Tune-up the engine regularly.
- Keep equipment in efficient operating condition.
- Dispose of used engine oil properly.

SAFETY RULES

Safe Operation Practices for Ride-on Mowers



WARNING: This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

I. General operation

1. Read, understand and follow all instructions in the Instruction Book, on the machine, the engine and with any attachments before starting.
2. Only allow responsible adults, who are familiar with the instructions, to operate the machine.
3. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade.
4. Be sure the area is clear of other people before mowing. Stop the machine if anyone enters the area.
5. Never carry passengers.
6. Turn off power to the blades or any attachments before backing up. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the mower discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass bagger or the mower guard in place.
8. Slow down before turning.
9. Never leave a machine unattended with the engine running. Always turn off the blade(s), set the parking brake, stop the engine and remove the key before dismounting.
10. Turn off power to attachment(s) when transporting or not in use. Turn off the blade(s) when not mowing.
11. Stop the engine before removing the grass bagger or unclogging the chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the machine while under the influence of alcohol or drugs or when very tired.
14. Watch for traffic when operating near or crossing roadways.
15. Use extra caution when loading or unloading the machine into a trailer or truck.
16. Disengage all attachment clutches and shift into Neutral before attempting to start the engine.
17. Always wear goggles, safety glasses, or an eye shield when you operate the unit to protect your eyes from foreign objects that can be thrown from the unit. Always wear eye protection when you make an adjustment or repair to the machine.
18. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.

OWNER'S INFORMATION

- b. Limit loads to those you can safely control.
- c. Do not turn sharply. Use care when backing.
- d. Use counterweights or wheel weights when suggested in the Instruction Book.
- 19. Do not operate this machine if you are taking drugs or other medication which can cause drowsiness or affect your ability to operate this machine.
- 20. Do not use this machine if you are mentally or physically unable to operate this machine safely.
- 21. Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower related injuries. These operators should evaluate their ability to operate a riding mower safely enough to protect themselves and others from serious injury.

II. Slope operation

Slopes and rough terrain are major factors related to loss-of-control and tip-over accidents, which can result in severe injury or death. ALL slopes require extra caution. If you cannot back up the slope or if you feel uneasy on the slope, do not mow it. See the "Slope Guide" in the back of this book to check for safe operation.

DO

1. Mow up and down slopes, not across.
2. Remove obstacles such as rocks, limbs, etc...
3. Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. *Tall grass can hide obstacles.*
4. Use slow speed. Choose a low enough gear so that you will not have to stop or shift while on the slope.
5. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
6. Use extra care with grass baggers or other attachments, they can change the stability of the machine.
7. Keep all movement on the slopes **slow and gradual**. Do not make sudden changes in speed or direction.
8. Avoid starting or stopping on a slope. If tires lose traction, turn off the blades and proceed slowly **straight down** the slope.

DO NOT

1. Do not turn on slopes unless absolutely necessary, then only turn slowly and gradually downhill, if possible.
2. Do not mow drop-offs, ditches or embankments. A wheel over the edge or an edge caving in could cause a sudden overturn and an injury or death.
3. Do not mow on wet grass. Reduced traction could cause sliding.
4. Do not try to stabilize the machine by putting your foot on the ground.
5. Do not use a grass bagger or other rear mounted accessories on steep slopes (greater than 10 degrees).

III. Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. NEVER assume that children will remain where you last saw them.

1. Keep children out of the mowing area and in the watchful care of another responsible adult.
2. Be alert and turn the engine off if children enter the area.
3. Before and when backing, look **behind and down** for small children.
4. Never carry children or any passengers, even with the blades off. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to operate the machine. Instruct children in the potential dangers of the machine.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

IV. Service

1. Use extra care when handling gasoline and other fuels. Fuels are flammable and the vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove the gas cap or add fuel with the engine running. Allow the engine to cool for several minutes before refueling. Do not smoke.
 - c. Never refuel the machine indoors.
 - d. Never store the machine with fuel in the tank or fuel container inside where there is an open flame, such as a water heater.
2. Never start or run the engine inside a closed area.
3. Keep all nuts and bolts, especially the blade attachment nuts tight. Frequently check the blade(s) for wear or damage such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with an original equipment blade from an authorized service dealer. For safety, replace the blade every two years. Keep the equipment in good condition.
4. Never tamper with the safety devices. Check their proper operation regularly.
5. To reduce fire hazards, keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spills. Allow the machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running. The carburetor can be adjusted with the engine running. Do not change the engine governor settings or over-speed the engine.
8. Grass bagger components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For storage, always make sure the grass bag is empty. Frequently check components and replace with manufacturer's recommended parts when necessary.
9. Mower blade(s) are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them or the blade housing area.
10. Check the brake operation frequently. Adjust and service as required.
11. Wait for all movement to stop before servicing any part of the unit.



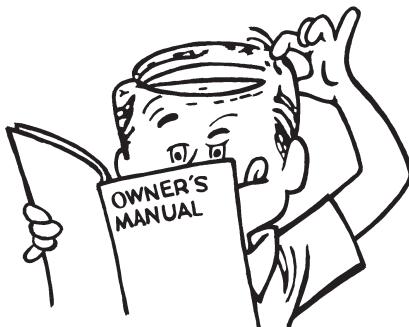
Look for this symbol to indicate important safety precautions. This symbol indicates: "Attention! Become Alert! Your Safety Is At Risk."

SAFE MOWING GUIDE

Each person that operates power equipment must learn to use correct and safe mowing procedures. **To help you learn, carefully read the following**

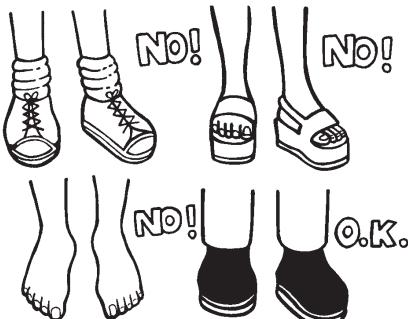
pages. Most of the time the operator was not correctly shown or did not read the instructions on the unit or in the Instruction Book before using the unit. Also, some operators do not have enough experience. The result is unsafe use, endangering the operator, bystanders and the equipment. Another result can be a poor appearance of the area mowed.

Read this book. Read the instructions on the unit. Operate the mower according to the Safe Mowing Guide. Follow all safety rules, cautions or warnings in this book and on the unit. Make sure anyone that uses the unit reads the instructions and is told how to safely operate the mower.



The mower will give you good service and durability, if operated in normal conditions. If the mower is not correctly serviced or is used where the terrain is rough or unsuitable, product performance and safety will be decreased.

Correct clothing is an important part of safe mowing. Safety glasses will protect the eyes from objects discharged by the mower. Safety shoes with steel plates can protect a foot from injury by the blade. For protection from objects discharged from the mower, wear clothing that will cover the arms and legs.



Before you start cutting the grass, practice using the mower in a large open and level area. Learn the location of the controls on the mower. Know the purpose of the

controls and how they work. In an emergency, how fast you can stop the blade is important. Learn how to control the mower at all times.

Many engines are started by hand. When you use a pull start or rope start, place your feet apart and away from the blade(s). Hold the rope handle tight. Never wrap the rope around your arm or fingers for a "better grip". To start the engine, follow the instructions on the mower, in this book and in the engine operating instructions.

For electric start engines, sit in the seat to start the engine. The battery can be dangerous. Follow the instructions on the battery, the acid container, and in this book when working with the battery. Even small batteries have enough voltage to cause an injury. Always be careful.

The mower is designed to be operated by one person. Never let another person ride with you on the unit or on any accessories. A passenger will make the unit harder to control, block the visibility or distract the operator and is dangerous to the operator, the passenger and the equipment. Without a passenger seat, the passenger can fall from the mower or contact dangerous parts. A mower is not a toy for showing off or for giving rides.



Never cut a wet lawn. Wet grass can cause an accident, affect mower performance and can cause problems with future lawn growth and appearance. Wet grass is slippery and can cause the mower to slip. Someone can get injured by touching the blade(s). Wet grass tends to clog the mower, causing poor discharge. Cut wet grass will collect on the lawn, retarding the growth of the grass. Also, getting the mower wet will cause parts to rust and decrease the life of the unit.

When you look over the lawn, remember obstacles that cannot be removed, like pipes, stumps or rocks. Keep away from these obstacles that can cause damage to the mower or injury to the operator or a person near the mower. Clear the area of rocks, toys, wire or other loose objects. These items can damage the mower or can be discharged by the mower blade.



The blade of a power mower rotates very fast. It can discharge rocks and other objects over a long distance which can be dangerous. The force of the objects can break windows, cause injuries or even put an eye out. Most of the time the injury is to a person, like a child. Keep every person completely away from the area to be mowed. Make sure the grass is not discharged toward anyone. Planning your mowing pattern has a double advantage. It can decrease the possibility of an injury and make the clean up after mowing easier.



Check the terrain of the area to be mowed. Mow in a pattern that will keep you away from dangerous areas. Check the distance you need to stop and the distance available to turn. Slopes and rough terrain must be mowed carefully and some areas must not be mowed at all. With riding mowers, mow up and down the hill. When you must mow rough terrain or on slopes, never change directions or change gears and stop in these areas only in an emergency. Before you ride up or down a slope, try to back straight up the slope. Do not ride up or down a slope that is too steep to back straight up. See the "Guide" in the back of this Instruction Book to check any slopes.



Before you start cutting, make sure the mower was completely assembled according to the Instruction Book. If the

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mower was completely assembled at the store, you must still check the mower according to the assembly instructions. Make sure the mower is correctly assembled and that all fasteners are tight. Make sure the engine has the correct amount of oil. Check these items often during the life of the mower.

Your mower has a gasoline engine. Gasoline is a dangerous fuel. Keep gasoline only in an approved safety gasoline container. Do not keep large amounts of gasoline. When you add gasoline to the fuel tank, do not smoke. Store the gasoline container and the mower in an area that has good ventilation. Also, keep the gasoline away from any flames like the pilot light of a furnace or any other source of ignition. If the mower is to be stored for more than a few weeks, remove the gasoline from the fuel tank. When inside an enclosure, do not add gasoline to the fuel tank. Before you add gasoline, move the mower outside and add gasoline carefully. Before you start the engine, remove any gasoline from the outside of the fuel tank or from the mower. Warm gasoline will expand. Leave some space in the fuel tank for the gasoline to expand. Also, the fuel cap has a vent hole for fuel vapors. Always use the correct fuel cap. Failure to follow safety rules about gasoline will cause fires and explosions, injury to you and damage to the equipment and other property.



If you add gasoline to an engine that is running or hot, the result can be an explosion. Before you add gasoline, stop the engine and let the engine cool for several minutes. Remove dry grass and other debris from the mower. Keep the mower clean to improve the performance, help the engine and transmission run cooler, extend the life of moving parts, and decrease the danger of a fire.

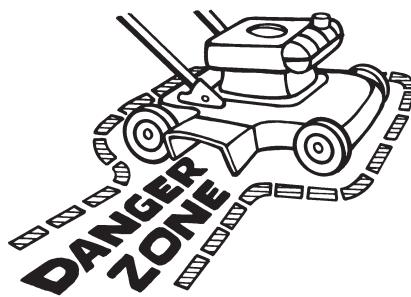
Fires and explosions are not the only dangers when working around a mower. The engine, transmission, and the muffler will get hot in several minutes when the engine is running. Do not touch these parts

of the mower. Stop the engine. Let the engine and transmission cool before servicing the mower. Remember, exhaust fumes are dangerous. Never operate the engine inside a building.

When you get a new mower, it can be a new experience for the family. Tell each person how a mower can be dangerous. Remember, a mower is not a toy. A mower is not to be used by children or anyone not old enough, strong enough or that does not have experience.

If the mower is not correctly assembled, not operated correctly, or not regularly serviced, the mower can be dangerous. The most important rule to follow is always use good judgement and common sense. Mow safely and carefully.

Your mower will easily cut thick grass. Fingers, feet and other parts can also be cut by the blade. Injuries occur when the operator does not think and reaches into the chute opening. Always operate the mower as if the blade is rotating. Do not service or make an adjustment, except to the carburetor, while the engine is running.



Use only accessories that are factory approved for your mower. The wrong accessory can decrease the safety of the mower and can even damage the unit. Read and follow the instructions included with the accessory and the mower.

Use only original equipment or replacement parts that are factory approved for service. If you need service, select an Authorized Service Center for your mower. If you do the work on the unit, follow the instructions in the Instruction Book.



When you mow, remember that children are attracted to the mower. Always use caution when mowing around obstacles like trees or shrubs or when moving backward. Only mow in a forward direction if possible. Your visibility is decreased when you mow backward. Also, the blades are made to cut while the unit is moving forward. If you mow backward, the cutting performance decreases.



Before you leave the mower, stop the engine. Remove the key. Disengage and lower any attachment. Set the parking brake. Never mount or dismount from the seat while the engine is running. An accident can occur if you touch the brake, shift lever, throttle, clutch or blade control while the engine is running. Mount and dismount from the seat on the side of the unit that is marked ENTER-EXIT.



Make sure you are in good condition when you mow. When you mow for several hours your reflexes will decrease and your mind will not be as alert. Take a short break or an accident can occur. If the temperature is hot, use caution to prevent dehydration. If you are tired, angry or not completely alert, do not operate the mower. If you use alcohol, medication or drugs, do not use the mower or any type of power equipment.

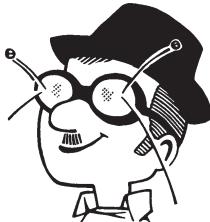
Engine speed is a key to safe mowing and to a good looking lawn. The maximum speed of the engine was set at the factory. Do not change the setting of the engine governor.

Select the maximum engine and ground speed that is right for the terrain and the height of the grass. The blade cuts best when the engine is operating at maximum speed. The engine and transmission will also run cooler at maximum engine speed.

SAFE MOWING GUIDE

Also, the grass bagger will function better when the engine is operating at maximum speed. On slopes, decrease the ground speed and use care making sure the mower feels safe to operate.

If the weather conditions are bad, do not mow. If weather conditions become bad, stop cutting and finish later. It is dangerous to cut grass in the rain. Always find protection in an electrical storm. If the weather conditions are extra dry, protect your eyes with safety glasses from the dust and from the objects discharged by the mower. Also, a dust or a pollen mask can help.

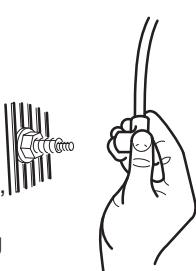


Your mower is equipped with a number of safety devices which are important to the safety of the operator and bystanders and must never be changed or removed from the mower. If a safety device is lost, damaged or no longer functions, repair or replace the device before you operate the mower.

It is best to mow during the day. If you must mow at night, make sure there is enough light for safe operation.

Your mower will require regular maintenance and service. The maintenance schedule depends on the hours of use. Also, mowing conditions can change the schedule. Check the Instruction Book for more information. Correct maintenance will help the mower function safely.

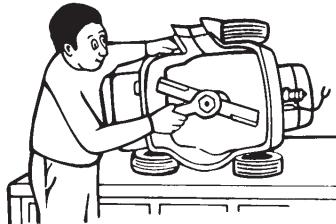
Do not service the mower (except for the carburetor adjustment) while the engine is running. Before you service the unit, even with the engine stopped, always disconnect the wire from the spark plug to prevent the engine from starting.



If you hit a large object during operation, stop the engine. Remove the wire from the spark plug. Carefully inspect the mower for damage. Before you start the engine again, make the necessary repairs. If you

feel new or excessive vibration, immediately stop the engine and check for the problem. Vibration can be a warning of a problem. Keep all nuts, bolts and screws tight.

The blade is the most dangerous part of the mower. Frequently check the blade and the blade mounting fasteners. Keep the fasteners tight. If the blade hits a solid object, stop the engine. Remove the wire from the spark plug. Check for a blade that is bent, cracked or for other damages. Before you start the engine, replace a damaged blade(s). For safety, replace the blade every two years.



A sharp blade decreases the workload on the engine and more evenly cuts grass. Frequently sharpen the blade for a better looking cut. Use the left side of the mower housing to trim near an object.

A grass bagger is a good accessory for your mower. For best performance and safety, make sure the grass bagger is approved for use with your mower. Follow the assembly and operation instructions included with the grass bagger.

Some grass baggers require a special blade for best performance. Before you attach, check, or empty the grass bagger, always stop the engine. Before each use of the grass bagger, check for cracks, wear or deterioration. Before you use the grass bagger, replace a damaged part with a replacement part approved by the factory.



For you to have a good green lawn, follow the mowing procedures below. Do not cut the grass too short. If you cut the grass too short you can cause the grass to become yellow or make the lawn look brown. Use a lower height of cut in cool months when the grass is thicker. Raise the height of cut in hot dry periods. If you cut the grass with

a blade that is not sharp or at a slow engine speed you can damage the grass. Move the throttle control to the FAST position when mowing and using the grass bagger. Also, use a slower ground speed when using the grass bagger.

If you change the direction or pattern of cut slightly every time you mow will make the grass grow stronger and thicker. Do not add oil or gasoline to the mower while on the lawn. Spilled oil or gasoline can kill the grass. In high or thick grass, do not try to cut all the grass the first time. Raise the height of cut on the first cutting and lower the height for the next cutting. Another way is to cut only part of the width of the mower and decrease your ground speed (not the engine) to move more slowly so that the mower can discharge the grass as it moves forward.

Understand the controls and how they work. Learn the ground speed(s) of your mower. Check the stopping distance required at different travel speeds. Check the turning radius of the mower. The controls on your riding mower are different from an automobile. The throttle is operated by hand and holds the engine speed constant until it is changed. The location of the shift lever and the shift pattern is different from that of an automobile. Also, the brake and clutch systems are different. Remember the procedures to follow in an emergency. Remember, turning off the engine ignition switch will stop the blade and the drive mechanism. If the traction of the wheels is lost or does not feel safe, disengage all systems and stop the engine. Dismount from the mower. Push the unit to a safe place before you begin mowing again.

Your unit has an electrical system that includes an operator presence switch in the seat. The operator presence switch detects if the operator is sitting on the seat. The engine will stop if the operator leaves the seat when the blade engagement control is engaged. This operator presence switch is a safety device only. It must not regularly be used to stop the engine or the blade. There are other control systems on the mower for this purpose. Always keep the operator presence switch and other safety devices and controls in place and operating for your protection.

Remember, your mower is a tool that can be dangerous if it is not correctly used. Follow the instructions in this Instruction Book. Safe and careful use of the mower will give you many safe hours of problem free use.

STEPS TO FOLLOW

BEFORE MOWING

- Be sure to dress correctly. Wear hard shoes, not sandals or tennis shoes.
- Examine the blade. A blade that is bent, cracked, or damaged must be replaced with a factory replacement blade.
- Fill the fuel tank outside. Clean off spilled fuel.
- Read and follow the Owner's Manual, the instructions with the engine, and the instructions with any attachments. Owner's Manual instructions are for your safety and the safety of others.
- Exhaust fumes are dangerous. Start the engine outside.
- Make sure all safety devices are in place and working correctly.
- Operation of the mower is only for a person that has experience.
- Wet grass can be dangerous. Let the grass dry.
- Instruct children and others to keep away from the work area.
- Never cut the grass without good light.
- Pick up loose objects. Remove them from the mowing area.

WHILE MOWING

- Watch for fixed objects and avoid them. They can damage the mower or cause injury.
- A hot engine, muffler, and transmission will cause a burn. Do not touch.
- Inclines and slopes must be carefully mowed. See the "Guide" in the back of this book to check a slope.
- Lack of daylight or good artificial light is cause to stop mowing.
- Examine the mower, the blade, and other parts for damage after hitting a foreign object or if the unit vibrates excessively.
- Do not make adjustments or repairs without stopping the engine. Disconnect the spark plug wire.
- On or near roads, watch out for traffic. Direct discharge away from roads.
- When mowing, avoid areas where traction is unsure. Look back before changing direction of travel.
- In heavy grass, raise the cutting height. Cut slower. Stop the engine to remove clogged grass from the mower.
- Never remove any safety related parts.
- Do not pour gasoline into a engine that is hot or running.

AFTER MOWING

- Always let the mower cool before storing in an enclosed area.
- Foreign material on the mower is dangerous. Clean off grass, leaves, grease and oil before storing.
- Tighten all loose nuts, bolts and screws before you use the unit.
- Empty and clean any grass catcher or other accessory.
- Remove the key or disconnect the spark plug wire to prevent unauthorized use.
- Make sure the mower is not kept near a source of ignition. Gas fumes can cause an explosion.
- Only original parts or factory approved substitutes can be used to service the mower.
- When storing the mower for an extended period, remove the fuel from the fuel tank.
- Instruct children to leave the mower alone. It is not a toy.
- Never keep gasoline near a source of ignition. Always use an approved container. Keep gasoline away from children.
- Lubricate according to the Instruction Book. See "Lubrication".

IMPORTANT—Read the Instruction Book. Keep this book for future use and reference.



WARNING: Look for this symbol to point out important safety precautions. It means: "Attention! Become Alert! Your Safety Is Involved."

INTERNATIONAL PICTORIALS

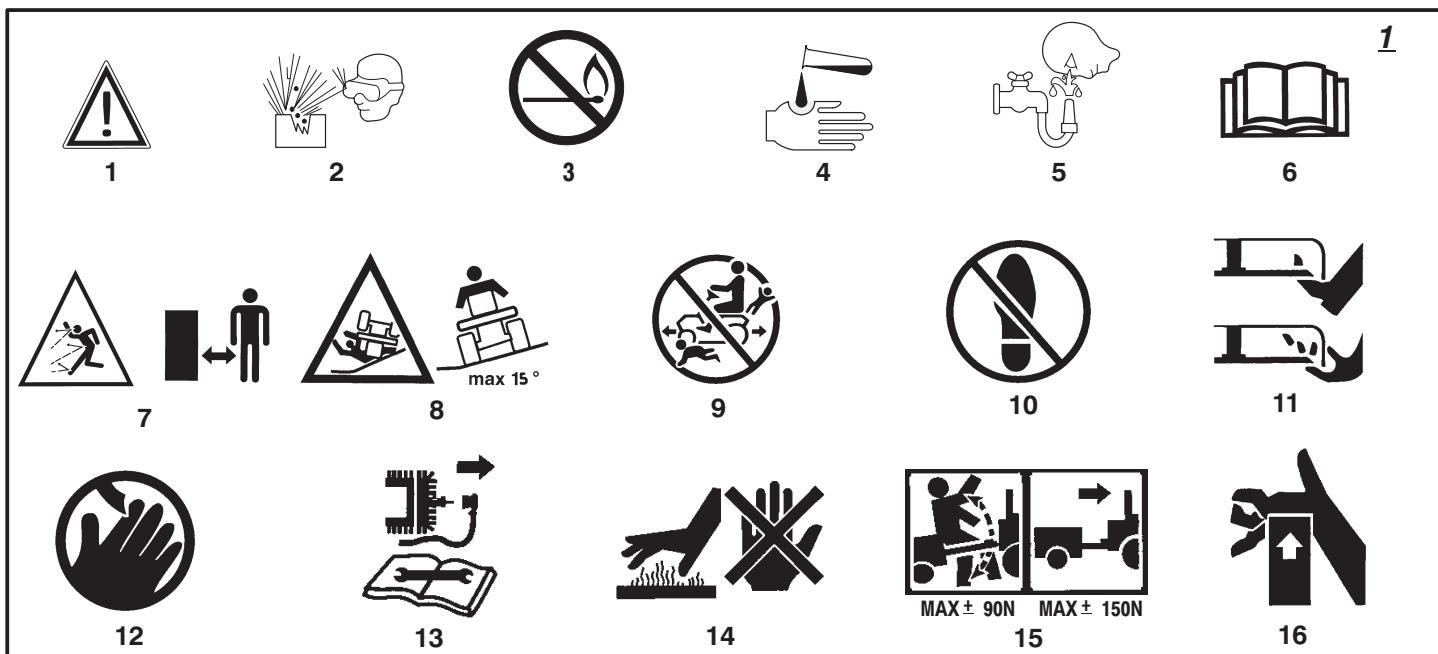
INTERNATIONAL PICTORIALS

IMPORTANT: Some of the following pictorials are located on your unit or on literature supplied with the product. Before you operate the unit, learn and understand the purpose for each pictorial.

Safety Warning Pictorials

- 1 Warning
- 2 Shield Eyes. Explosive Gases Can Cause Blindness Or Injury.
- 3 No Sparks, Flames or Smoking.
- 4 Sulphuric Acid Can Cause Blindness Or Severe Burns

- 5 Flush Eyes Immediately With Water. Get Medical Help Fast.
- 6 IMPORTANT: Read Owner's Manual Before Operating This Machine.
- 7 WARNING: Thrown Objects. Keep Bystanders Away. Read User Instructions Before Operating This Machine.
- 8 WARNING: Do Not Use This Machine On Slopes Greater Than 15 Degrees.
- 9 DANGER: Keep People, Especially Children, Away From Unit.
- 10 DANGER: No Step.
- 11 DANGER: Keep Feet And Hands Away From Rotating Blade.
- 12 DANGER: Keep Hands Away From Rotating Blade.
- 13 DANGER: Disconnect Spark Plug Wire Before Servicing Unit.
- 14 WARNING: Hot Surface.
- 15 WARNING: Use Caution When Connecting Or Disconnecting Accessories.
- 16 WARNING: Crushed Fingers.

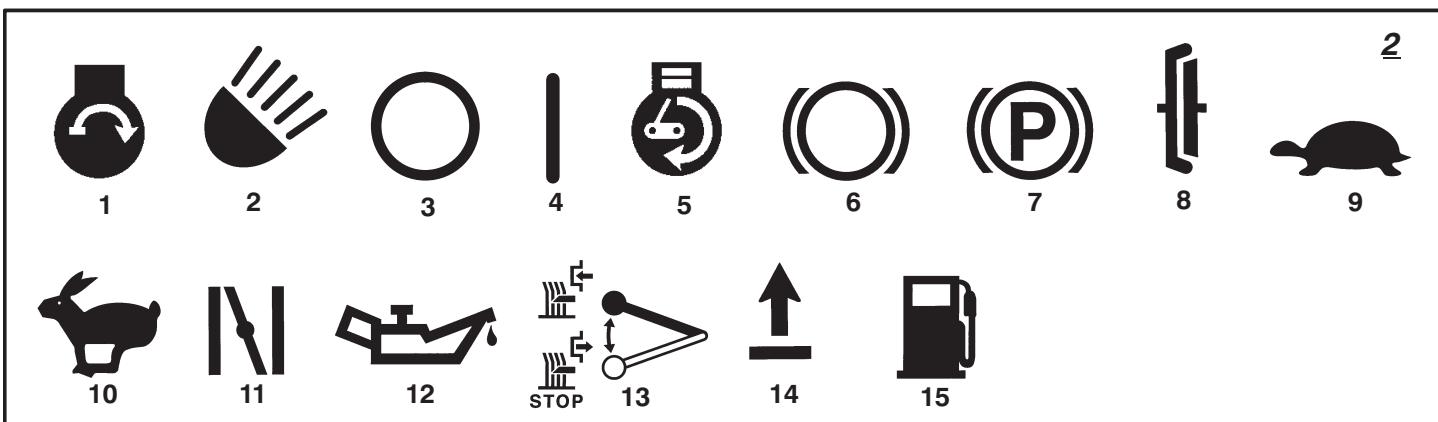


Control And Operating Pictorials

- 1 Engine Start
- 2 Lights
- 3 Engine Stop
- 4 Engine Stop
- 5 Engine Run

- 6 Brake
- 7 Parking Brake
- 8 Clutch
- 9 Slow
- 10 Fast

- 11 Choke
- 12 Oil
- 13 Blade Rotation Control
- 14 Raise
- 15 Fuel



ASSEMBLY

ASSEMBLY

Read and follow the assembly and adjustment instructions for your mower. All fasteners are in the parts bag. Do not discard any parts or material until the unit is assembled.

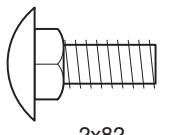


WARNING: Before doing any assembly or maintenance to the mower, remove the wire from the spark plug.

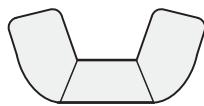
NOTE: In this instruction book, left and right describe the location of a part with the operator on the seat.

PARTS BAG – CONTENTS

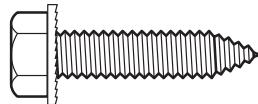
The fasteners and other loose parts are shown below. The fasteners are shown full size. The quantity is shown in brackets ().



2x82
(2) Carriage Bolt



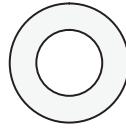
14x79
(2) Wing Nut



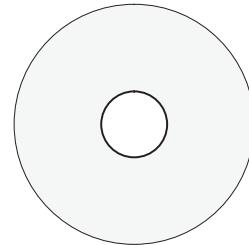
25x3
(1) Bolt



1001054
(2) Knob



17x47
(2) Washer



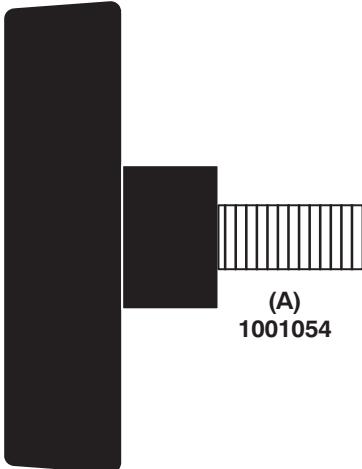
17x146
(1) Washer

ASSEMBLY

HOW TO INSTALL THE SEAT

1. Carefully remove the plastic bag from the **seat**.

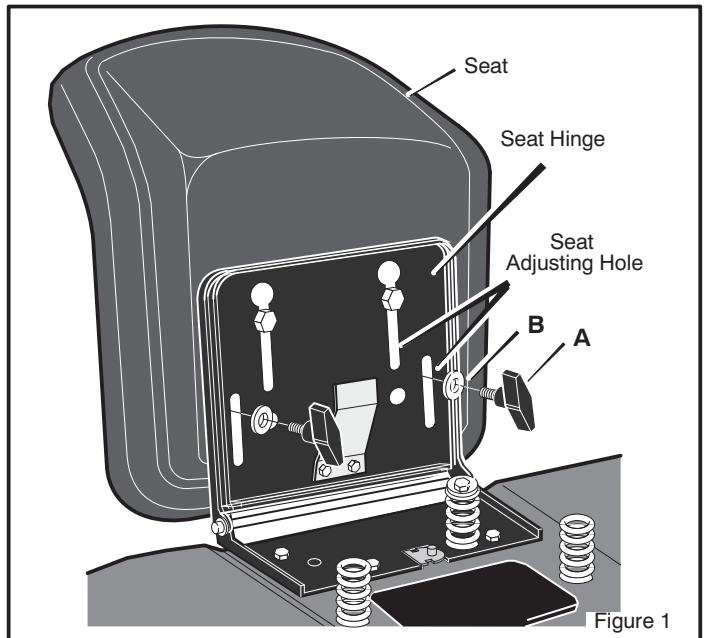
Use the fasteners shown below to install the **seat**. The fasteners are shown at full size.



NOTE: Fasteners may be attached to seat for shipping purposes, if so remove fasteners before proceeding.

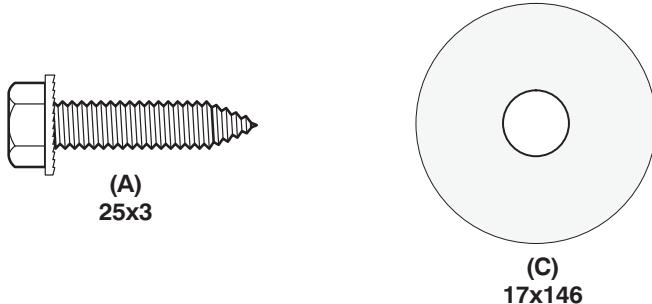
2. Align the holes in the **seat hinge** to the holes in the **seat** (Figure 1). Fasten the **seat** to the **seat hinge** with the fasteners as shown.

3. Check the operating position of the **seat**. If the **seat** needs to be adjusted, loosen the two **wing bolts**. Slide the **seat** forward or backward along the **seat adjusting holes** as shown. Tighten the **wing bolts** (A).

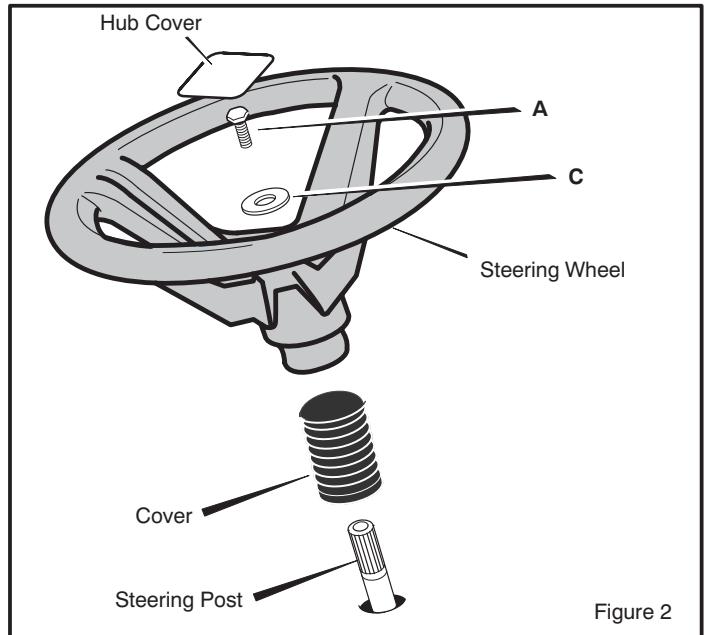


HOW TO ASSEMBLE THE STEERING WHEEL

Attach the steering wheel as follows:



1. Make sure the front wheels point forward.
2. Slide the **cover** over the **steering post** (Figure 2).
3. Slide the **steering wheel** onto the **steering post**.
4. Use the fasteners shown above to secure the **steering wheel**. The fasteners are shown at full size. Tighten the screw. DO NOT over tighten.
5. Remove adhesive backing from **hub cover** (found in parts bag) and place **hub cover** over hub.



ASSEMBLY

MAINTENANCE FREE BATTERY

IMPORTANT: Before you attach the battery cables to the battery, check the battery date. The battery date tells if the battery must be charged.

1. Check the top of the battery for the location of the **battery date** (Figure 3).
2. If the **battery** is put into service *before* the **battery date**, the **battery** cables can be attached without charging the **battery**. See "How To Install The Battery Cables".
3. If the **battery** is put into service *after* the **battery date**, the **battery** must be charged. See "How To Charge The Maintenance Free Battery".

HOW TO CHARGE THE MAINTENANCE FREE BATTERY



WARNING: When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

1. Remove the **battery** and **battery tray**.
2. Remove the protective caps from the **battery terminals**.

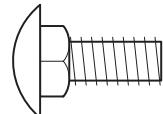
3. Use a 12 volt battery charger to charge the **battery**. Charge at a rate of 6 amperes for one hour. If you do not have a battery charger, have an authorized service center charge the battery.
4. Install the **battery** and **battery tray**. Make sure the **positive (+) terminal** is on the left side.

HOW TO INSTALL THE BATTERY CABLES

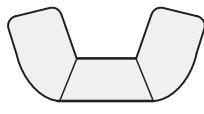


WARNING: To prevent sparks, fasten the red cable to the positive (+) terminal before you connect the black cable.

Use the fasteners shown below to install the **battery cables**. The fasteners are shown at full size.



(A)
2x82



(B)
14x79

1. Remove the protective caps from the **battery terminals**.
2. Fasten the **red cable** to the **positive (+) terminal** with the fasteners as shown (Figure 3).
3. Fasten the **black cable** to the **negative (-) terminal** with the fasteners as shown.

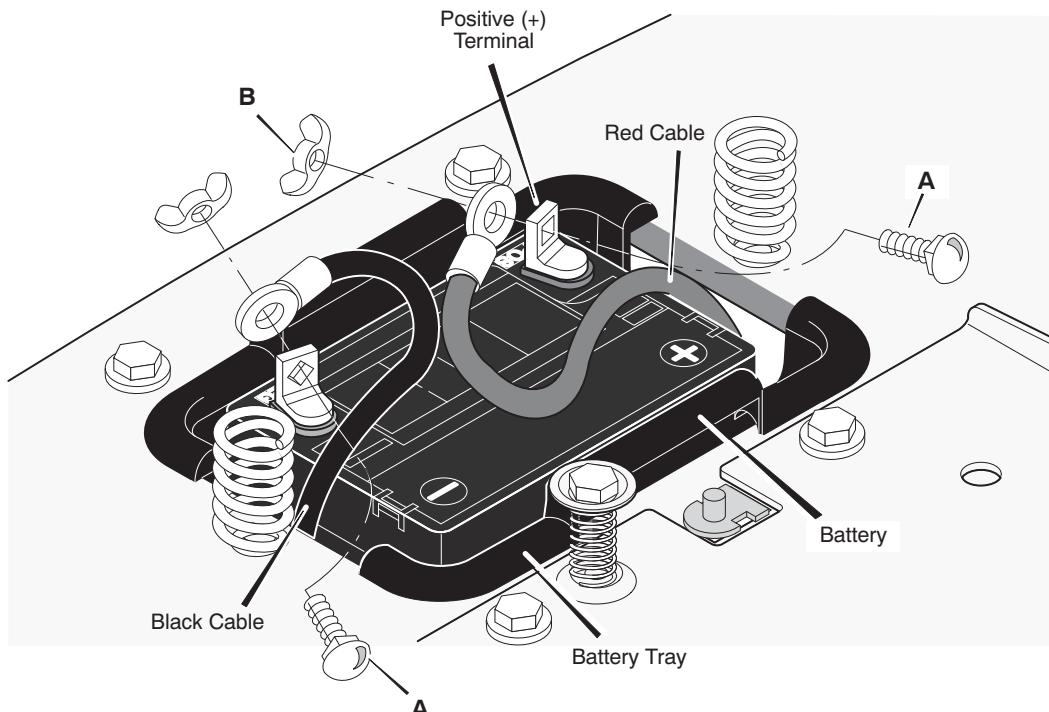


Figure 3

ASSEMBLY

IMPORTANT! BEFORE YOU START MOWING

- Check the engine oil.
- Fill the fuel tank with gasoline.
- Check the level of the mower housing.
- Check the air pressure of the tires.
- Make sure the battery cables are attached.



WARNING: Before doing any assembly or maintenance to the mower, remove the wire from the spark plug.

NOTE: In this instruction book, left and right describe the location of a part with the operator on the seat.

HOW TO PREPARE THE ENGINE

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed.

See the engine manufacturer's instructions for the type of gasoline and oil to use. Before you use the unit, read the information on safety, operation, maintenance, and storage.



WARNING: Follow the engine manufacturer's instructions for the type of gasoline and oil to use. Always use a safety gasoline container. Do not smoke when adding gasoline to the engine. When inside an enclosure, do not fill with gasoline. Before you add gasoline, stop the engine. Let the engine cool for several minutes.

NOTE: Engine horsepower ratings may vary by engine adjustments, manufacturing variances, altitude, atmospheric conditions, fuel and maintenance.

IMPORTANT: This unit is equipped with an internal combustion engine and must not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it must be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. See an Authorized Service Center for a spark arrester for the muffler.

In some areas, local law requires the use of a resistor spark plug to control the ignition signals. See an Authorized Service Center for a resistor spark plug for the engine.

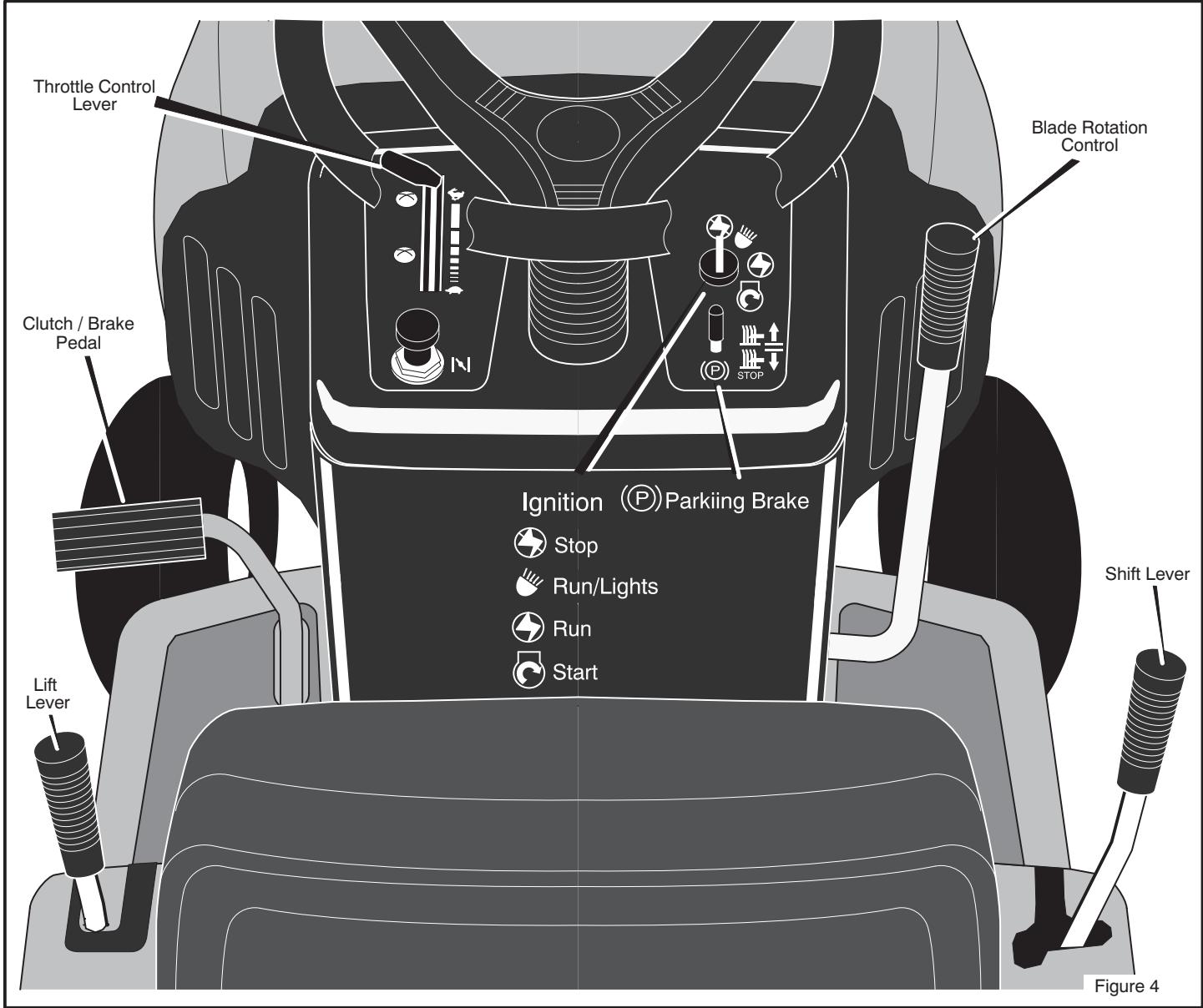
CHECK THE LEVEL OF THE MOWER HOUSING

Make sure the level of cut is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the Maintenance section of this instruction book.

CHECK THE TIRES

Check the air pressure in the tires. Tires with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure (PSI) is 14 PSI (1 BAR). The tires were over inflated for shipment.

OPERATION



LOCATION OF CONTROLS

BLADE ROTATION CONTROL: Use the blade rotation control to start and stop the rotation of the blades.

CLUTCH / BRAKE PEDAL: The pedal has two functions. The first function is a clutch. The second function is a brake.

HEADLIGHT SWITCH: The headlight switch is the first part of the ignition switch. To use the lights with the engine running, turn the key to the position for the lights.

IGNITION SWITCH: Use the ignition switch to start and stop the engine.

SHIFT LEVER: Use the shift lever to change the speed of the unit.

LIFT LEVER: Use the lift lever to change the height of cut.

PARKING BRAKE LEVER: Use the parking brake lever to engage the brake when you leave the unit.

THROTTLE CONTROL LEVER: Use the throttle control lever to increase or decrease the speed of the engine.

OPERATION

ATTACHMENTS

This unit can use many different attachments. See the attachment page in this book. This unit can pull attachments like a lawn sweeper, a lawn aerator, a hopper spreader or a small trailer.

For all pull-behind attachments or trailers, the maximum gross weight is 300 pounds. Gross weight is the weight of the attachment or trailer and any load that might be on or in it.

Do not operate on a slope that is greater than 10 degrees when using a pull-behind attachment or trailer. We have included a slope guide in this book to help you determine the slope on which you will be operating your unit. Never allow someone to stand or ride on or in an attachment or trailer.

HOW TO USE THE THROTTLE CONTROL

Use the **throttle control** to increase or decrease the speed of the engine.

1. The **FAST** position is marked with a detent. For normal operation and when using a grass bagger, move the **throttle control** to the **FAST** position. For maximum charging of the battery and for a cooler running engine, operate the engine in the **FAST** position.
2. The engine governor is set at the factory for maximum performance. Do not adjust the governor to increase the speed of the engine.

HOW TO USE THE BLADE ROTATION CONTROL

Use the **blade rotation control** to engage the blade(s) (Figure 5).

1. Before you start the engine, make sure the **blade rotation control** is in the **DISENGAGE** position.

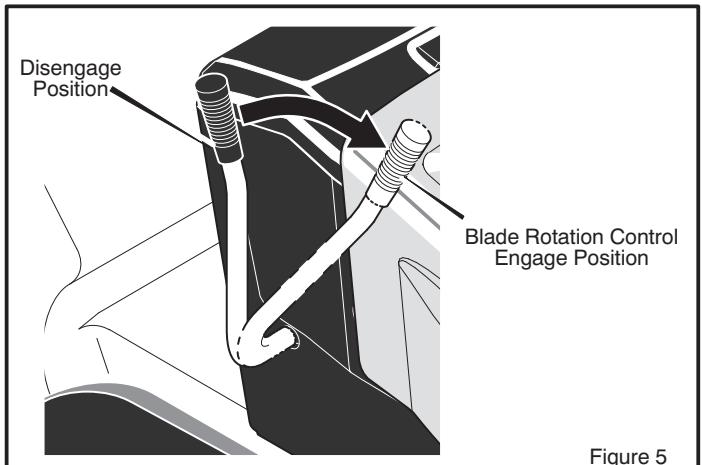


Figure 5

2. Move the **blade rotation control** to the **ENGAGE** position to rotate the blade(s).

NOTE: If the engine stops when you engage the blade(s), the seat switch is not activated. Make sure you sit in the middle of the seat.

3. Move the **blade rotation control** to the **DISENGAGE** position to stop the blade(s). Before you leave the operator's position, make sure the blade(s) has stopped rotating.
4. Before you ride the unit across a sidewalk or a road, move the **blade rotation control** to the **DISENGAGE** position.

WARNING: Always keep your hands and feet away from the blade, deflector opening, and the mower housing when the engine runs.

HOW TO USE THE SHIFT LEVER

To change the forward speed or the direction of the unit, follow the steps below.

CAUTION: Before you move the shift lever, completely push the clutch/brake pedal forward to stop the unit. If the unit is not stopped, the gearbox can be damaged.

1. Completely push the clutch/brake pedal forward to stop the unit. Keep your foot on the pedal.
2. Move the throttle control lever to the **SLOW** position.
3. To go forward, move the shift lever to a forward speed setting. To go backward, move the shift lever to reverse.
4. Slowly release the clutch/brake pedal. Do not keep your foot on the pedal.
5. Move the throttle control to the **FAST** position.

FUNCTION	SHIFT LEVER 5 Speeds	THROTTLE
Trimming Snow Thrower	1	
Bagging Grass	1 or 2	
Mulching Grass	1 or 2	
Normal Mowing	2 or 3	
Easy Mowing Snow Blade	3 or 4	
Transport	5	
Attachments	*	

* See the Instruction Book for the Attachment.

OPERATION

HOW TO SET THE PARKING BRAKE

1. Completely push the clutch/brake pedal forward.
2. Lift the **parking brake lever** (Figure 6).
3. Remove your foot from the clutch/brake pedal and then release the **parking brake lever**. Make sure the parking brake will hold the unit.
4. To release the parking brake, completely push the clutch/brake pedal forward. The parking brake will automatically release.

WARNING: Before you leave the operator's position, move the shift lever to the neutral (N) position. Set the parking brake. Move the blade rotation control to the DISENGAGE position. Stop the engine and remove the ignition key.

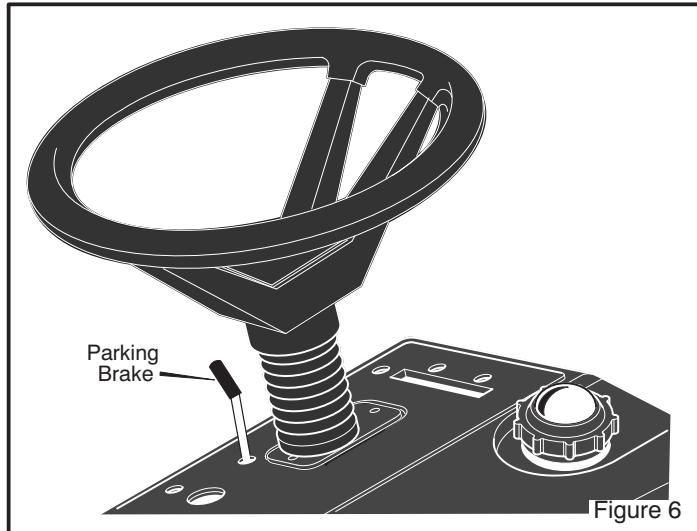


Figure 6

HOW TO CHANGE THE CUTTING HEIGHT

To change the cutting height, raise or lower the **lift lever** as follows.

1. Move the **lift lever** forward to lower the mower housing and back to raise the mower housing (Figure 7).
2. When you ride on a sidewalk or road, move the **lift lever** to the highest position and move the blade rotation control to the DISENGAGE position.

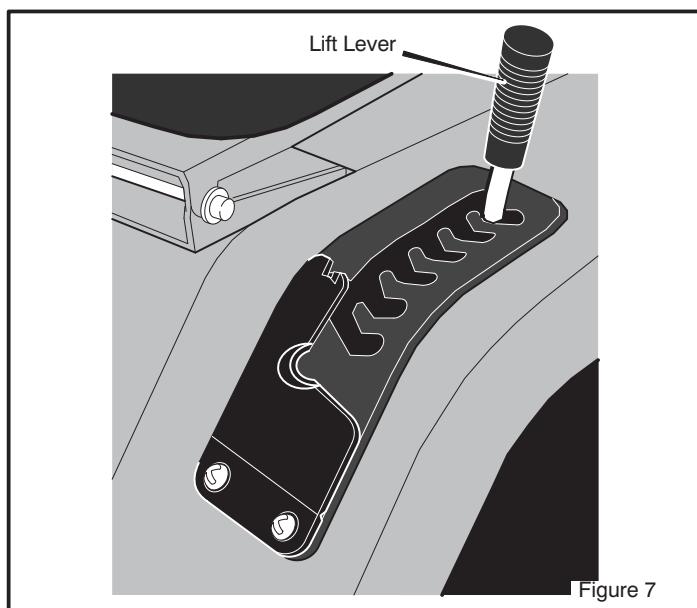


Figure 7

HOW TO STOP THE UNIT

1. Completely push the **clutch/brake pedal** forward to stop the unit. Keep your foot on the pedal.
2. Move the blade rotation control to the DISENGAGE position.
3. Move the shift lever to the NEUTRAL position.
4. Set the parking brake.

WARNING: Make sure the parking brake will hold the unit.

5. Move the throttle control to the SLOW position.
6. To stop the engine, turn the ignition key to the OFF position. Remove the key.

HOW TO TRANSPORT THE UNIT

To transport the unit, follow the steps below.

1. Move the blade rotation control to the DISENGAGE position
2. Raise the lift lever to the highest position.

3. Move the throttle control to a position between SLOW and FAST.
4. To go faster, move the shift lever to a faster speed.

OPERATION

HOW TO OPERATE WITH THE MOWER HOUSING



WARNING: The deflector is a safety device. Do not remove the deflector. The deflector forces the discharged material toward the ground. Always keep the deflector in the down position. If the deflector is damaged, replace the deflector with an original equipment part from an authorized service center.

1. Start the engine.
2. Move the lift lever to a height of cut position.
3. Move the throttle control to the SLOW position.
4. Move the blade rotation control to the ENGAGE position.
5. Push the clutch/brake pedal completely forward.

IMPORTANT: In high or thick grass, cut the grass in the highest position first and then lower the mower housing to a lower position.

6. Move the shift lever to one of the speed settings.

NOTE: When you mow in heavy grass or mow with a bagger, put the shift lever in the slowest speed.

7. Slowly release the clutch/brake pedal.
8. Move the throttle control to the FAST position. If you need to go faster or slower, stop the unit and move the shift lever to another speed setting.
9. Make sure the level of cut is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the Maintenance section.



WARNING: For better control of the unit, always select a safe speed.

HOW TO OPERATE THE UNIT ON HILLS



WARNING: Do not ride up or down slopes that are too steep to back straight up. Never ride the unit across a slope. See the "Slope Guide" in the back of this book for information on how to check slopes.

1. Before you ride up or down a hill, move the shift lever to the slowest speed.
2. Do not stop or change speed settings on a hill. If you must stop, quickly push the clutch/brake pedal forward and set the parking brake.

3. To start again, make sure the shift lever is in the slowest speed. Move the throttle control to the SLOW position. Slowly release the pedal.
4. If you must stop or start on a hill, always have enough space for the unit to roll when you release the brake and engage the clutch.
5. Be very careful when you change directions on a hill. When on a slope or in a turn on a hill, move the throttle control to the SLOW position to help prevent an accident.

OPERATION

BEFORE STARTING THE ENGINE

CHECK THE OIL

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed. See the engine manufacturer's instructions for the type of gasoline and oil to use.

1. Make sure the unit is level.

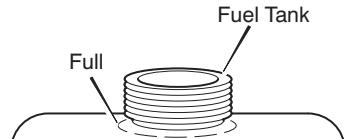
NOTE: Do not check the level of the oil while the engine runs.

2. Check the oil. Follow the procedure in the engine manufacturer's instructions.
3. If necessary, add oil until the oil reaches the FULL mark on the dipstick. The quantity of oil needed from ADD to FULL is shown on the dipstick. Do not add too much oil.

ADD GASOLINE

WARNING: Always use a safety gasoline container. Do not smoke when adding gasoline to the fuel tank. Do not add gasoline when you are inside an enclosure. Before you add gasoline, stop the engine and let the engine cool for several minutes.

Fill the fuel tank with regular unleaded gasoline. Do not use premium unleaded gasoline. Make sure the gasoline is fresh and clean. Leaded gasoline will increase deposits and shorten the life of the valves.



CAUTION: A mixture of alcohol (ethanol or methanol) and gasoline (called gasohol), will attract moisture and cause acid deposits during storage. While the unit is in storage, the acids in the fuel can damage the fuel system.

To prevent engine problems with the fuel system, empty the fuel system before storage of 30 days or longer as follows.

1. Drain the fuel tank.
2. Start the engine. Let the engine run until the fuel lines and the carburetor are empty.
3. After storage, make sure you use fresh fuel. See the storage instructions for additional information.
4. Never use engine cleaner or carburetor cleaner in the fuel tank or permanent damage can occur.

CARBURETOR

The factory settings for the carburetor are for most conditions. If the engine is operated under the following conditions, you can adjust the carburetor mixture. To adjust the carburetor, see the engine manufacturer's instructions.

1. The engine has a loss of power or does not run smooth.
2. A change from summer to winter operation.
3. A 40 degree change in the operation temperature. The carburetor was adjusted at 80 degrees at the factory.
4. The engine is operated above 4,000 feet.

HOW TO START THE ENGINE

WARNING: The electrical system has an operator presence system that includes a sensor switch for the seat. These components tell the electrical system if the operator is sitting on the seat. This system will stop the engine when the operator leaves the seat if the blade rotation control is engaged or if the transmission is engaged. For your protection, always make sure this system operates correctly.

NOTE: The engine will not start unless you depress the clutch/brake pedal or engage the parking brake and move the blade rotation control to the DISENGAGE position.

1. Push the clutch/brake pedal completely forward. Keep your foot on the pedal.

2. Move the shift lever to the neutral (N) position.
3. Make sure the blade rotation control is in the DISENGAGE position.
4. Move the throttle control completely forward to the CHOKE or FAST position. Some models have a separate choke knob. Pull the choke knob to the full CHOKE position.
5. Turn the ignition key to the START position. Release the key when the engine starts.

NOTE: If the engine does not start after four or five tries, see the TROUBLE SHOOTING CHART.

6. Slowly move the throttle control to the SLOW position.
7. Let a cold engine run for several minutes. Begin work when the engine is warm. To start a hot engine, move the throttle control to a position between FAST and SLOW.

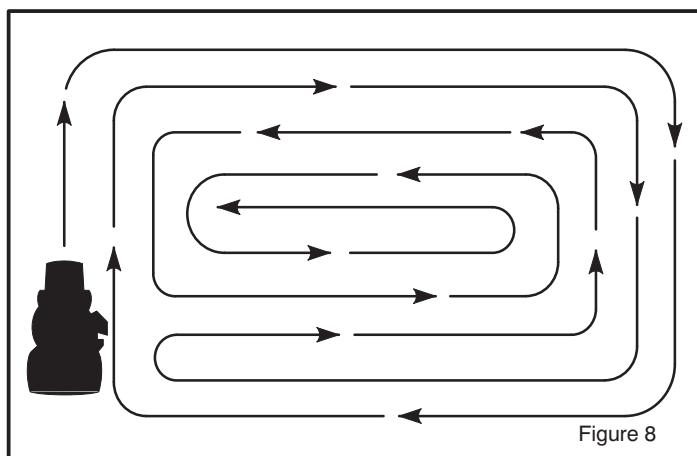
OPERATION

OPERATING TIPS

1. Check the blade rotation control for correct adjustment. For the blade(s) to disengage correctly, the adjustment must be correct.
2. Before you use the unit, check the oil in the engine and add oil if necessary.
3. If the engine will not start, first make sure the wire is attached to the spark plug.
4. Make sure all the belts are inside all the belt guides. See the instructions on how to remove and install the motion drive and mower drive belts.
5. Before you make an inspection, adjustment (except for the carburetor) or repair, make sure the wire from the spark plug is disconnected.
6. For longer life of the battery on electric start models, charge the battery every three months.
7. Use the shift lever to change the ground speed, not the throttle control.
8. Belt noise can occur when the blade or clutch is engaged. This noise is normal and does not affect the operation of the unit.

MOWING AND BAGGING TIPS

1. For a lawn to look better, check the cutting level of the mower housing. See "How To Level The Mower Housing" in the Maintenance section.
2. For the mower housing to cut level, make sure the tires have the correct amount of air pressure.
3. Every time you use the unit, check the blade. If the blade is bent or damaged, immediately replace the blade. Also, make sure the nut for the blade is tight.
4. Keep the blade(s) sharpened. Worn blades will cause the ends of the grass to turn brown.
5. Do not cut or bag grass that is wet. Wet grass will not discharge correctly. Let the grass dry before cutting.
6. Use the left side of the mower housing to trim near an object.
7. Discharge the cut grass onto the mowed area. The result is a more even discharge of cut grass.
8. When you mow large areas, start by turning to the right so that the cut grass will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left turns until finished (Figure 8).
9. If the grass is very high, cut two times to decrease the load on the engine. First cut with the mower housing in the highest position and then lower the mower housing for the second cut.
10. For better engine performance and an even discharge of the cut grass, always operate the engine with the throttle in FAST position.
11. When you use a bagger, operate the engine with the throttle in FAST position and the shift lever in first or second gear.
12. For better cutting performance and a quality cut, mow with the shift lever in one of the slower speeds.
13. After each use, clean the bottom and top of the mower housing for better performance. Also, a clean mower housing will help prevent a fire.



OPERATION

HOW TO CHANGE THE MULCHER PLATE



WARNING: To prevent the engine from starting, disconnect the wire from the spark plug. Make sure the blade rotation control is in the DISENGAGE position.

The **mulcher plate** lets you mulch the grass for a clean, fine cut. To discharge the grass out the side or into a grass bagger, remove the **mulcher plate** as follows.

How To Remove The Mulcher Plate

1. Raise the **deflector**. Remove the two wingnuts **B** and two carriage bolts **A** (Figure 9).
2. Lift the **mulcher plate** away from the mower housing (Figure 10).
3. Attach wingnuts **B** and carriage bolts **A** to the **mulcher plate** for future use.

IMPORTANT: There are several different types of grass. Some types of grass are more difficult to cut. If you remove the mulcher plate and the grass does not discharge correctly, replace the blade with a standard blade. The part number of the standard blade is 92117E701.

How To Install The Mulcher Plate

1. Raise the **deflector**. Mount the bottom flange of the **mulcher plate** to the mower housing (Figure 10).
2. Slide the top of the **mulcher plate** under the **deflector bracket** (Figure 9).
3. Fasten the **mulcher plate** with two wingnuts **B** and two carriage bolts **A**.

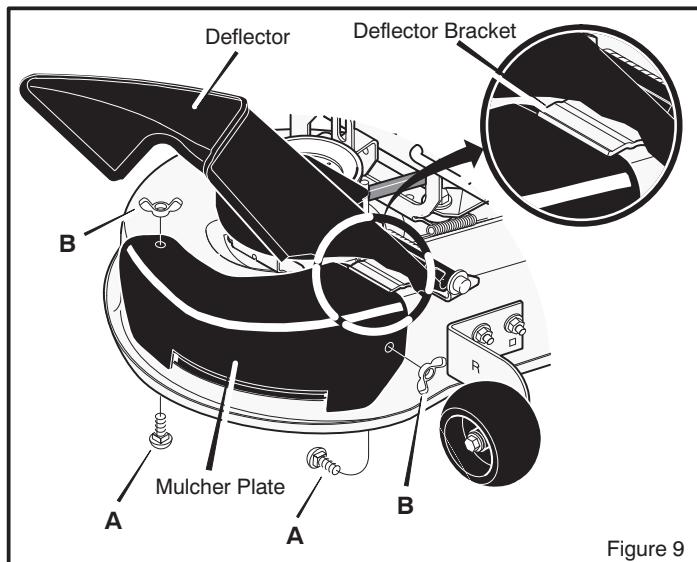


Figure 9

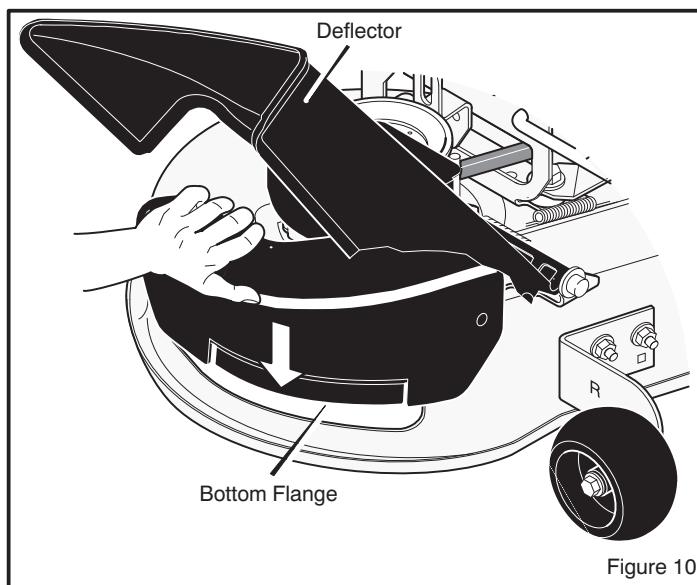


Figure 10